EA Engineering, P.C.
EA Science and Technology

6712 Brooklawn Parkway, Suite 104
Syracuse, New York 13211-2158
Telephone: 315-431-4610
Fax: 315-431-4280
www.eaest.com

10 October 2018

Ms. Sarah Saucier
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7012

RE: Pre-Design Investigation Activities – Wetland Sampling (Shopping Plaza)
Contract/WA No: D007624-39
Site/Spill No./Pin: Dzus Fastener Company Inc. Remedial Design (Site No. 152033)

Dear Ms. Saucier:

This technical memo describes the sampling in the wetland behind the shopping plaza conducted as part pre-design investigation (PDI) of Operable Unit-4 (OU-4) of the Dzus Fastener Company Inc (Dzus) Site located in West Islip, New York. The PDI activities were conducted to inform the remedial design for sediment and soil removal from OU-4. Field sampling activities were conducted in accordance with the Dzus PDI Work Plan[1], EA's Generic Field Activities Plan[2], Quality Assurance Project Plan[3], and Health and Safety Plan[4].

WETLAND SEDIMENT SAMPLING

EA collected samples from the wetland area behind the shopping plaza off Union Boulevard (Figure 1) to further delineate sediment concentrations in this area. Sample locations included W2S, W2N, and CR8S located in the vicinity of W3 along the CR8 transect (Figure 1).

SEDIMENT SAMPLING METHODOLOGY

The field crew began the wetland sampling on 6 September 2018 equipped with a hand auger and a multi-stage sampler. Sampling began at location W2N, on the edge of the wetland in a location within an area that appeared to be inundated periodically throughout the year. There was no standing water present. The field crew first attempted sampling with the hand auger, and was able to achieve a depth of approximately 2.5 ft. The field crew then continued sampling in the same hole with the multi-stage sampler, achieving a depth of 4.5 ft. before hitting refusal due

[1] EA. 2018. Letter Work Plan for Pre-Design Investigation Activities – Lake Capri. August.
[2] EA. 2011a. Generic Field Activities Plan for Work Assignments under NYSDEC Contract D007624. April.
[3] EA. 2011c. Generic QAPP for Work Assignments under NYSDEC Contract D007624. October.
[4] EA. 2011b. Generic HASP for Work Assignments under NYSDEC Contract D007624. October.

to hard-packed sand and/or gravel. A sample was collected from the 3.5-4.5 ft. interval, along with a field duplicate.

The field team then attempted to sample location CR8S, located in an area with approximately 10-12 inches of soft sediments overlying saturated sand. Using the hand auger, a depth of approximately 2 ft. was achieved before the hole started collapsing due to the shallow water table and flowing sands. Attempts to use the multi-stage sampler resulted in sediments flowing out of the cores as the sampler was retrieved. Sampling was postponed until later in the day to see if using a VibeCore-Mini would be more successful. After the field crew was finished coring on Lake Capri, they mobilized to the wetland area to attempt using the VibeCore-Mini at locations CR8S and W2S. The sampling was unsuccessful. Upon core retrieval, the saturated loose sand and gravel failed to create a seal in the core, and the sample was lost.

Due to the shallow water table and flowing sands, two samples were collected from each of the remaining locations on 7 September 2018 using the hand auger (the method that allowed for best recovery of sample), one at the interval immediately above the water table and one at the deepest interval achievable without the hole collapsing. Due to rain the prior evening, the water table was at the surface of the sediments, resulting in the 0-1 ft. interval being sampled at both CR8S and W2S. Using the hand auger, the sampling team was able to reach the 3-3.5 ft. interval at both CR8S and W2S to collect samples before the borings began to collapse.

ANALYTICAL RESULTS

The analytical results from the wetland sediment sampling are presented on Table 1, with the full laboratory report included as Attachment 1. Cadmium exceeded NYSDEC Class C sediment guidance values at all three locations and all depths (Figure 2). Concentrations ranged from 28 mg/kg (152033-W2N-3.5-4.5) to 13,000 mg/kg (152033-CR8S-0-1). Chromium exceeded NYSDEC Class C sediment guidance values in the 0-1 ft. intervals collected from W2S and CR8S. Chromium concentrations ranged from 12 mg/kg (152033-W2N-3.5-4.5) to 890 mg/kg (152033-CR8S-0-1).

If you have any questions, please do not hesitate to contact me at (315) 565-6554.

Sincerely yours,

EA Engineering, P.C.

Frank DeSantis Jr.,
Project Manager

Don Conan, P.E.
Vice President

Attachments:
Figures, Tables, Laboratory Report

Figures

This page left intentionally blank

G:\Projects\State&Local\NYSDEC - D007624\D007624 - Work Assignments\114907.39 - Dzus Fastners OU3 RD\05 GIS\Projects\WetlandMemo\Figure1 SedLocations.mxd

0 75 150
Feet

1 inch = 75 feet

Max Depth Exceedance (ft)

- 0
- 0.5
- 1
- 2
- 3
- 4

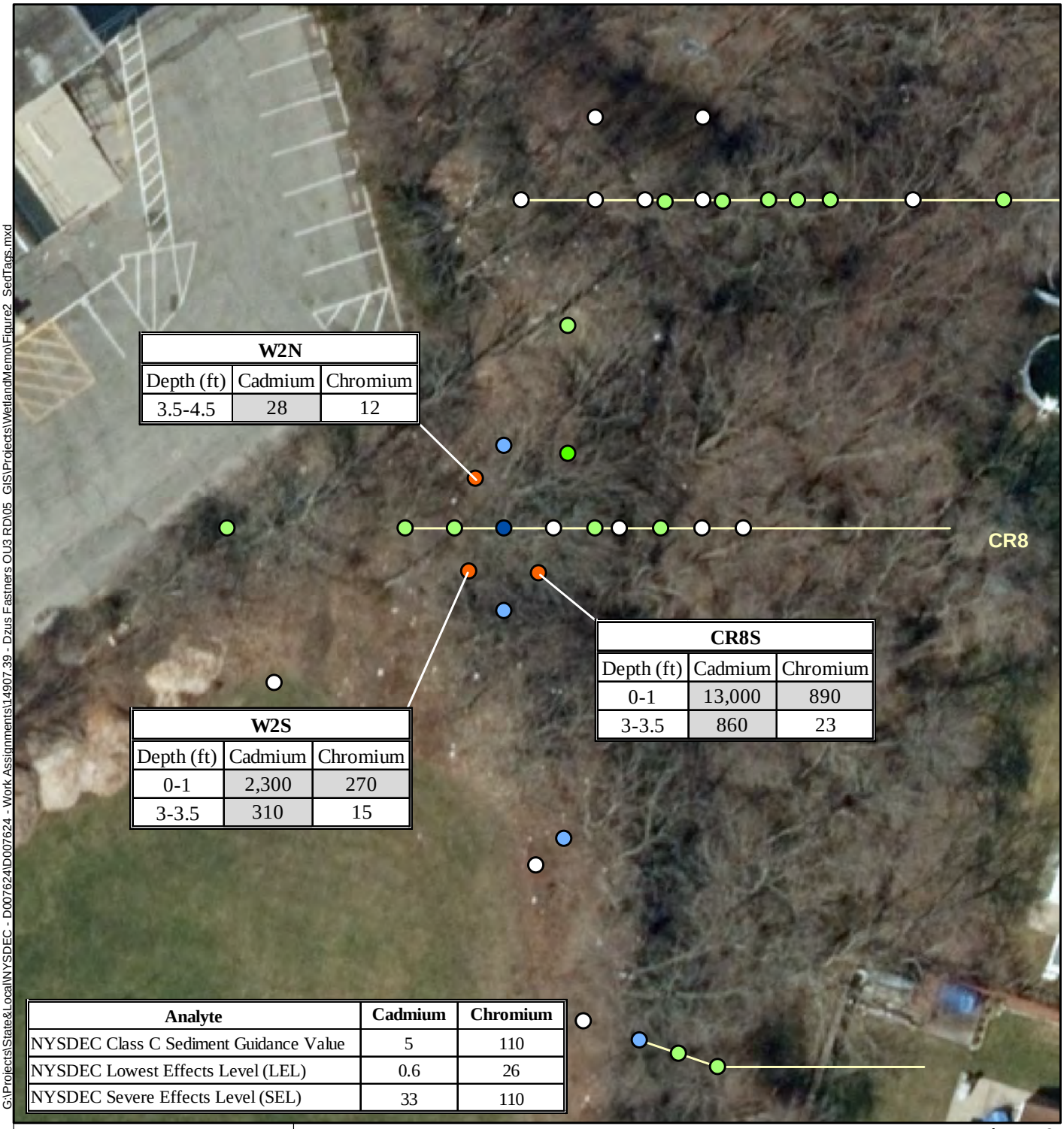
N

Note: Exceedance is above Class C (5 mg/kg) Cd SGV

Figure 1
Sediment Sampling Locations in Wetland
Dzus Fastener Company, Inc.
Wetland Technical Memo
West Islip, NY

Map Date: 10/8/2018
Projection: NAD83 State Plane New York Long Island

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

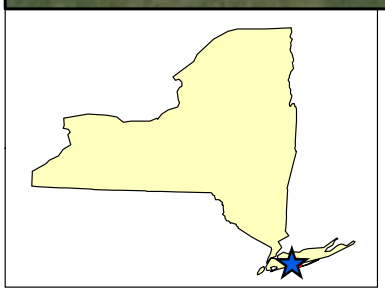


W2N		
Depth (ft)	Cadmium	Chromium
3.5-4.5	28	12

CR8S		
Depth (ft)	Cadmium	Chromium
0-1	13,000	890
3-3.5	860	23

W2S		
Depth (ft)	Cadmium	Chromium
0-1	2,300	270
3-3.5	310	15

Analyte	Cadmium	Chromium
NYSDEC Class C Sediment Guidance Value	5	110
NYSDEC Lowest Effects Level (LEL)	0.6	26
NYSDEC Severe Effects Level (SEL)	33	110



Max Depth Exceedance (ft.)

- 0
- 0.5
- 1
- 2
- 3
- 4
- Sept. 2018 Sample Point

0 35 70
Feet

1 inch = 35 feet

N

Note: Results exceeding the NYSDEC Class C sediment guidance values are shaded gray.
NYSDEC = New York State Department of Environmental Conservation
mg/kg = Milligram(s) per kilogram
ft. = Foot (feet)

Figure 2
Sediment Cadmium and Chromium Concentrations (mg/kg) in Wetland
Dzus Fastener Company, Inc.
Wetland Technical Memo
West Islip, NY

Map Date: 10/8/2018
Projection: NAD83 State Plane New York Long Island

G:\Projects\State&Local\NYSDEC - D007624\D007624 - Work Assignments\114907.39 - Dzus Fastners OU3 RD\05 GIS\Projects\WetlandMemo\Figure2 SedTags.mxd

Tables

This page left intentionally blank

Table 1 Cadmium and Chromium in Wetland Sediment

					Analyte	Cadmium	Chromium
					NYSDEC Class C Sediment Guidance Value	5	110
					NYSDEC Lowest Effects Level (LEL)	0.6	26.0
					NYSDEC Severe Effects Level (SEL)	33.0	110.0
Location Identification	**Sample Name**	**Sample Date**	**Parent Sample**	**Sample Depth (ft)**		**Result (mg/kg)**	**Result (mg/kg)**
W2N	152033-W2N-3.5-4.5	9/6/2018	--	3.5-4.5		28	12
	152033-FD-01	9/6/2018	152033-W2N-3.5-4.5	3.5-4.5		30	13
W2S	152033-W2S-0-1	9/7/2018	--	0-1		2,300	270
	152033-W2S-3-3.5	9/7/2018	--	3-3.5		310	15
CR8S	152033-CR8S-0-1	9/7/2018	--	0-1		13,000	890
	152033-CR8S-3-3.5	9/7/2018	--	3-3.5		860	23

Notes

ft. = Foot (feet)

mg/kg = Milligram(s) per kilogram

NYSDEC = New York State Department of Environmental Conservation

Results exceeding the NYSDEC Class C sediment guidance values are shaded gray.
Note that there are separate SGVs for freshwater and saltwater sediment.

This page left intentionally blank

Attachment 1

Laboratory Analytical Report

This page intentionally left blank

Hampton-Clarke Report Of Analysis

Client: EA Engineering, Science & Technology
HC Project #: 8091201
Project: Dzus Fastener Lake Capri

Sample ID: 152033-W2N-3.5-4.5
Lab#: AD06459-001
Matrix: Soil
Collection Date: 9/6/2018
Receipt Date: 9/12/2018

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		86

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	1.4	28
Chromium	1	mg/kg	5.8	12

Sample ID: 152033-W2S-0-1
Lab#: AD06459-002
Matrix: Soil

Collection Date: 9/7/2018
Receipt Date: 9/12/2018

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		21

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	5.7	2300
Chromium	1	mg/kg	24	270

Sample ID: 152033-W2S-0-1 MS
Lab#: AD06459-003
Matrix: Soil

Collection Date: 9/7/2018
Receipt Date: 9/12/2018

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		21

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	5.7	2400
Chromium	1	mg/kg	24	560

Sample ID: 152033-W2S-0-1 MSD
Lab#: AD06459-004
Matrix: Soil

Collection Date: 9/7/2018
Receipt Date: 9/12/2018

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		21

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	5.7	1900
Chromium	1	mg/kg	24	480

Sample ID: 152033-W2S-3-3.5 **Collection Date:** 9/7/2018
Lab#: AD06459-005 **Receipt Date:** 9/12/2018
Matrix: Soil

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		75

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	1.6	310
Chromium	1	mg/kg	6.7	15

Sample ID: 152033-CR8S-0-1
Lab#: AD06459-006
Matrix: Soil

Collection Date: 9/7/2018
Receipt Date: 9/12/2018

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		18

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	5	mg/kg	33	13000
Chromium	1	mg/kg	28	890

Sample ID: 152033-CR8S-3-3.5
Lab#: AD06459-007
Matrix: Soil

Collection Date: 9/7/2018
Receipt Date: 9/12/2018

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		77

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	1.6	860
Chromium	1	mg/kg	6.5	23

Sample ID: 152033-FD-01 | **Collection Date:** 9/6/2018
Lab#: AD06459-008 | **Receipt Date:** 9/12/2018
Matrix: Soil

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		87

Metals Pair 6010D

Analyte	DF	Units	RL	Result
Cadmium	1	mg/kg	1.4	30
Chromium	1	mg/kg	5.7	13

Hampton-Clarke, Inc. (WBE/DBE/SBE)

175 Route 46 West and 2 Madison Road, Fairfield, New Jersey 07004
Ph: 800-426-9992 | 973-244-9770 Fax: 973-244-9787 | 973-439-1458
Service Center: 137-D Gaither Drive, Mount Laurel, New Jersey 08054
Ph (Service Center): 856-780-6057 Fax: 856-780-6056

Hampton-Clarke WBE/DBE/SBE 800-426-9992

A Women-Owned, Disadvantaged, Small Business Enterprise

NELAC/NJ #07071 | PA #68-00463 | NY #11408 | CT #PH-0671 | KY #90124 | DE HSCA Approved

CHAIN OF CUSTODY RECORD

Project # (Lab Use Only): 8091201

Page 1 (2nd) of 1

3) Reporting Requirements (Please Circle)

Turnaround	Report Type	Electronic Data Deliv.
When Available:	Summary	NJ Hazsite
1 Business Day (100%)*	Results + QC (Waste)	Excel Reg. NJ / NY / PA
2 Business Days (75%)*	Reduced:	EnviroData
3 Business Days (50%)*	[ ] NJ [ ] NY	EQuIS:
4 Business Days (35%)*	[ ] PA [ ] Other___	[ ] 4-File [ ] EZ
5 Business Days (25%)	NJ Full / NY ASP CatB	[X] NYDEC
8 Business Days (Stand.)	NY ASP CatA	[ ] Region 2 or 5
Other:		Other:

* Expedited TAT Not Always Available. Please Check with Lab.

Customer Information

1a) Customer: EA Engineering, Science & Tech
Address: 6712 Brooklawn Pkwy. Suite 104
Syracuse, NY 13211
1b) Email/Cell/Fax/Ph: hwilliams@eaest.com
1c) Send Invoice to: northeastap@eaest.com
1d) Send Report to: hwilliams@eaest.com
fdesantis@eaest.com

Project Information

2a) Project: Dzus Fastener Site
Lake Capri PDI
2b) Project Mgr: Frank DeSantis
2c) Project Location (City/State): West Islip, NY
2d) Quote/PO # (If Applicable): 1490739

FOR LAB USE ONLY

Batch #: A06459

===> Check If Contingent ===>

Matrix Codes
DW - Drinking Water; S - Soil; A - Air
GW - Ground Water; SL - Sludge
WW - Waste Water; OL - Oil
OT - Other (please specify under item 9, Comments)

7) Analysis (specify methods & parameter lists)

<=== Check If Contingent <===

Lab Sample #	4) Customer Sample ID	5) Matrix	6) Sample Date	6) Sample Time	Sample Type: Composite (C)	Sample Type: Grab (G)	Chromium & Cadmium by 6010	8) # of Bottles: None	MeOH	En Core	NaOH	HCl	H2SO4	HNO3	Other:	9) Comments
001	W2N-3.5-4.5	S	9/6/18	0830		X	X	1								
002/003/004	W2S-0-1		9/7/18	1000		X	X	3								use for MS/MSD
005	W2S-3-3.5			1005		X	X	1								
006	CR8S-0-1			1020		X	X	1								
007	CR8S-3-3.5		↓	1025		X	X	1								
008	FD-01	↓	9/6/18	—		X	X	1								

10) Relinquished by:	Accepted by:	Date	Time
Hilary Williams 9/11/18 UPS		9/12/18	0945

11) Sampler (print name): Hilary Williams Date: 9/7/2018

Additional Notes

Add "152033-" as prefix to each sample ID

Comments, Notes, Special Requirements, HAZARDS

Indicate if low-level methods required to meet current groundwater standards (SPLP for soil):
- [ ] BN or BNA (8270D SIM)
- [ ] VOC (8260C SIM or 8011)
- [ ] SPLP (BN, BNA, Metals)
- [ ] 1,4 Dioxane

For NJ LSRP projects, indicate which standards need to be met:
- [ ] NJDEP GWQS
- [ ] NJDEP SRS
- [ ] NJDEP SPLP
- [ ] Other (specify):

Check if applicable:
- [ ] Project-Specific Reporting Limits
- [ ] High Contaminant Concentrations
- [ ] NJ LSRP Project (also check boxes above/right)

Cooler Temperature: 3.4

Please note NUMBERED items. If not completed your analytical work may be delayed.
A fee of $5/sample will be assessed for storage should sample not be activated for any analysis.

Internal use: sampling plan (check box) HC [ ] or client [ ] FSP#

This page left intentionally blank